

Date: Thursday, 6/15/2006 1:37:54 PM  
 User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : SKID TUBE ASSEMBLY  
 Job Number : 27549A  
 Estimate Number : 10023  
 P.O. Number : *NIA* Part Number : D205634041  
 This Issue : 6/15/2006 S.O. No. : *NIA* Drawing Number : D2580 REV C  
 Prsht Rev. : NC Project Number : N/A  
 First Issue : *NIA* Type : LANDING GEAR Drawing Revision : C  
 Previous Run : 27548A Material : *NIA*  
 Written By : *See comment below* Due Date : 7/10/2006 Qty: 1 Um: Each  
 Checked & Approved By : *OK 06.06.15*  
 Comment : Est Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ  
 Est Rev. O 06.02.28 Added paperwork EC

## Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description :

1.0

D25001190

Ext'n -1' Beam Tube 4"



Comment: Qty.: 1.0400 Each(s)/Unit Total : 1.0400 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2500-1-190

Skid Tube Extrusion

*B24669**Pm' 06-06-22 ①*

2.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy D205-634 bluefile &amp; type labels per PPP D205-634 CHG001

*KS 06 06 26 ①*

3.0

D2596

205 Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2596

205 Web

*B2765T**Pm' 06-06-27 ①*

4.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- Inspect mat'l D2500-1-190 for damage

*Pm' 06-06-22 ①*

2-Cut D2500-1-190 per Dwg D2580 if necessary Deburr ends

*Pm' 06-06-22 ①*

3-Drill pilot holes using drill jig DT 8149

*Pm' 06-06-22 ①*

4-Acid etch and Alodine tube per QSI 005 4.1

*Pm' 06-06-23 ①*

W/O:		WORK ORDER CHANGES							
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DATE	STEP	Description of NC Section A	Corrective Action		Section B		Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr		Sign & Date			

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_

NOTE: Date & initial all entries

NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5-Open holes to 0.500" as per Dwg D2580 without cutting fluid

6-Countersink holes as per Dwg D2580 without cutting fluid

7-Deburr and blow out all chips from inside of tube

8-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting

Pick:

Qty Part Number Description Batch

A/R Sikaflex-291 ml01193

Sikaflex expire date: 06-11-01

Start Time: 4:15

Fin Time: 6-6-28

DP06-6-27  
Fin 06-06-27 (1)

5.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

1-Bend as per program D2580.C on CNC Bender and Folio FT009

2-Cut tubes as per Dwg. D2580

DP06-6-28

6.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Deburr ends after cutting. Remove alodine from around holes

BE 06-06-29

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

06-06-30 (1)

8.0

D25763

Step (Machining Detail)



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2576-3

Step

B23060 BE 06-07-05

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Job Number:



Seq. #:

Machine Or Operation:

Description :

9.0

D2579

Crossbolt Spacer



Comment: Qty.: 20.0000 Each(s)/Unit Total: 20.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
20	D2579	Spacers	B-25977 BE 06-07-05

10.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Prepare tube for welding D2576-3 StepRemove alodine as required.

BE 06-07-05

2-Weld step D2576 as per Dwg. D2580 and QSI 004

A/R

Aluminum Rod

M100660

BE 06-07-05

3-Weld crossbolt spacers D2579 as per Dwg. D2580 and QSI 004. For D2579 spacers, weld one side, pass 3/8" drill, weld other side, pass 3/8" drill

A/R

Aluminum Rod

M100660

BE 06-07-05

4-Grind welds as per Dwg D2580 Grind flush ridge made from bending

5-Drill holes for wearplates using DT 8217Open holes to 19/64", adjust stopper not to hit web. Deburr

6-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580. Deburr holes

7-Drill pilot holes for aft cap using DT 8215Open holes to #6 Drill bit. Deburr

8-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr

DP  
6-7-12

DP  
6-7-13

11.0

QC5/9

WELD INSPECTION



Comment: WELD INSPECTION

Inspect weld and Counterbore work to Step 20

2007-12 (1) PD

06-07-14 (1)

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Powder Coat White (Ref: 4.3.5.2) as per QSI 005 4.3

a.m

06-07-26

(1)

W/O:		WORK ORDER CHANGES						
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Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

DC 06/07/26 (1)

14.0

D25771

Wearplate Fwd



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-1	Wearplate	B25137

15.0

D25773

Wearplate Aft



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-3	Wearplate	B26058

16.0

D25775

Wearplate, Centre



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-5	Wearplate	B24199

17.0

ALS71032130

Insert



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

70

Qty	Part Number	Description	Batch
44	ALS7-1032-130	<del>Washer</del> inserts	M19393

18.0

AN960JD10L

Washer



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

10

Qty	Part Number	Description	Batch
44	AN960JD10L	<del>Washer</del> inserts	M101291

DC 06/07/26 (1)

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NOTE: Date & initial all entries

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Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

AN34A

Bolt



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	AN3-4A	Bolt	<u>M18310</u>

20.0

D25941

Plug



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
16	D2594- <del>3</del>	O-RING plug	<u>B25593</u>

21.0

D25943

O-Ring



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
16	D25943	Plug o-ring	<u>B24104</u>

22.0

D2855

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch: B23925A

23.0

AN35A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch: M15205

24.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

Batch: M101291

DL 06/07/2006 (1)

W/O:		WORK ORDER CHANGES						
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NOTE: Date & initial all entries

NCR: Yes ☒ No ☐ DQA: LD Date: 06/08/04  
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 M101621

Sikaflex expire date: 02/07

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291 M101621

Sikaflex expire date: 02/07

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

M101667

Batch:

FL 06/07/26

26.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

27.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-634-041

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

28.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

Job Completion



C206108/04

06/08/04

W/O:		WORK ORDER CHANGES						
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

NOTE: Date & initial all entries QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. C SHEET 1 OF 2
DATE 98.08.26		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	

RELEASED  
98/09/17 DS

QTY	Part Number	Description
X	D2580-041	SKIDTUBE ASSEMBLY
*	D2500-1	EXTRUSION
1	D2596	205 WEB
1	D2575	AFT CAP
1	D2576 - 3	STEP
20	D2579	CROSS BOLT SPACER
16	D2594-1	PLUG
16	D2594-3	O-RING
1	D2577-1	WEARSHOE
1	D2577-3	WEARSHOE
1	D2577-5	WEARSHOE
44	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or ALS4-1032-130	INSERT
46	AN3-4A	BOLT
46	AN960JD10L	WASHER

# 00.08.28  
UP 00.08.28

EFFECTIVE DEOS  
98/12/14  
DEO 9124  
DEO 9183

#### GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2500-1 EXTRUSION BEFORE BENDING = 190 INCHES \*
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (44 PLACES) AFTER FINISH. INSTALL AN3-4A BOLTS AND AN960JD10L WASHERS WITH SIKAFLEX-241.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:  
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

SHOP COPY  
RETURN TO  
ENGINEERING  
CONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO 27549A

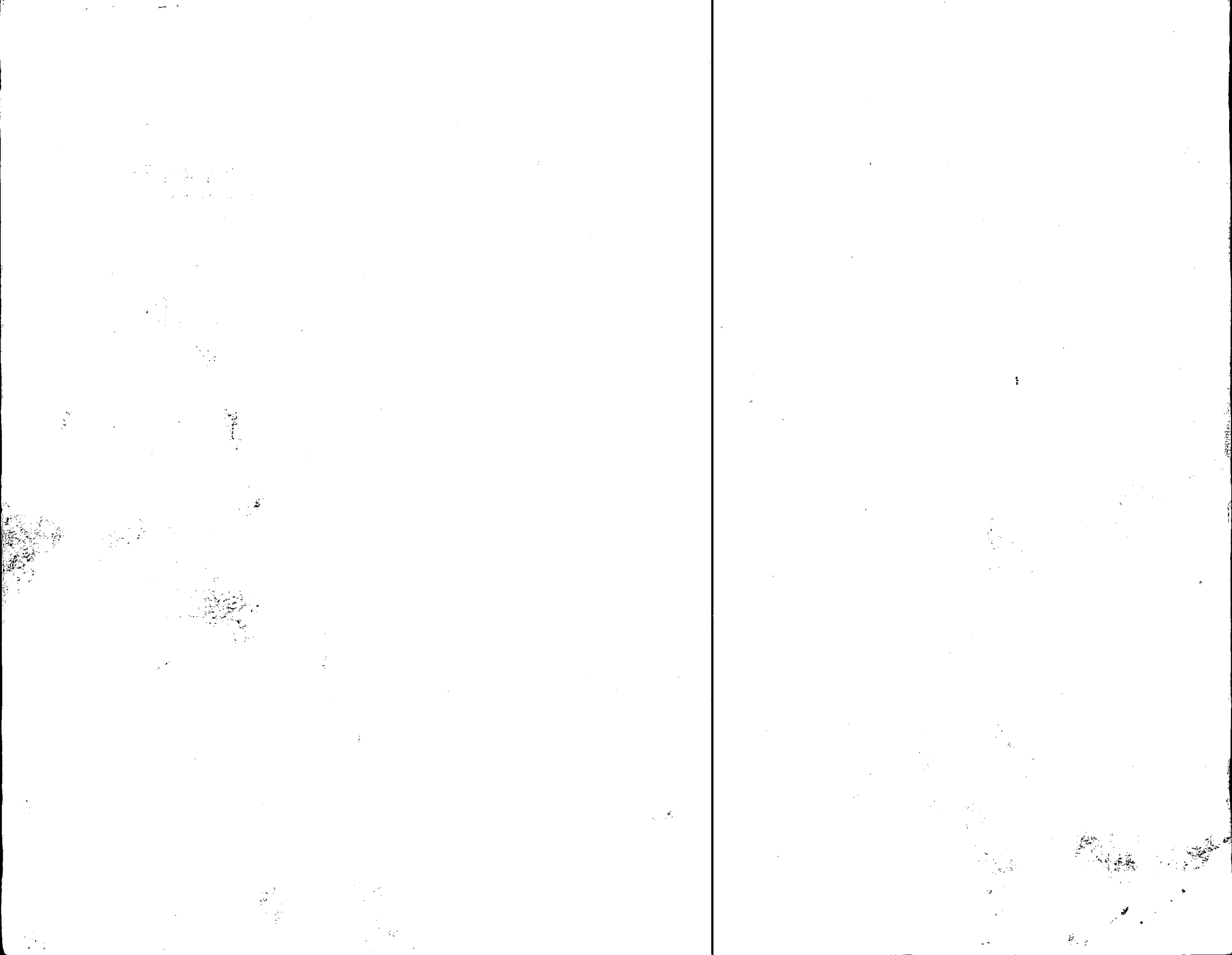


Diagram illustrating the underside of a propeller with grinding locations marked:

- GRIND FLUSH (4 PLACES)
- GRIND FLUSH
- GRIND FLUSH
- LOCATION RIDGE ON UNDERSIDE OF D2576
- GRIND FLUSH
- GRIND FLUSH

0.208

DRILL PRIOR TO D2575 CAP  
INSTALLATION (2 PLACES)

AN3-4A BOLT (1)  
AN960JD10L WASHER (1)  
(2 PLACES)

D2575 CAP

0.40

SEAL WITH SIKAFLEX-241

D2579 SPACER

SHOE

RETAINER

WEB

D2586

AFTER PERFORM

1. CHA
2. INS
3. WEL

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C-BORE D2579 SPACER TO  $\phi 0.437$  X 1.00 DEEP

[illegible]

WELD AS PER DETAIL B

BLACK ANTI-SKID TOP OF STEP TO 0.5 ABOVE BOTTOM EDGE

BLACK ANTI-SKID TO 0.5 ABOVE LOCATION RIDGE

0.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5

P P P P P P P P

REFER TO DETAIL C

02577-3

02577-5

02577-1

8

AN3-4A BOLT (1)  
AN96QJ10L WASHER (1)  
(44 PLACES)

DESIGN DRA	DRAWN BY C.B.	DATE 10/1/54
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02577-0-1

RELEASE  
98/09/17 DS

DESIGN <i>DAF</i>	DRAWN BY <i>CP</i>	 <b>DART AEROSPACE LTD</b> MARKHAM, ONTARIO, CANADA	
CHECKED <i>DAF</i>	APPROVED <i>JS</i>	DRAWING NO. D2580	REV. C SHEET 2 OF 2
DATE 98.08.26		TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24

